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ULTIMHEAT®



THERMOSTATS WITH INGRESS PROTECTION HOUSINGS

and connection boxes for heating elements

The professional solution: an extended, rational and consistent range of products

Technical catalogue for R&D department

Edition 02/04/2013



E-Mail: info@ultimheat.com Web: www.ultimheat.com

Y5 Hand held miniature temperature controls



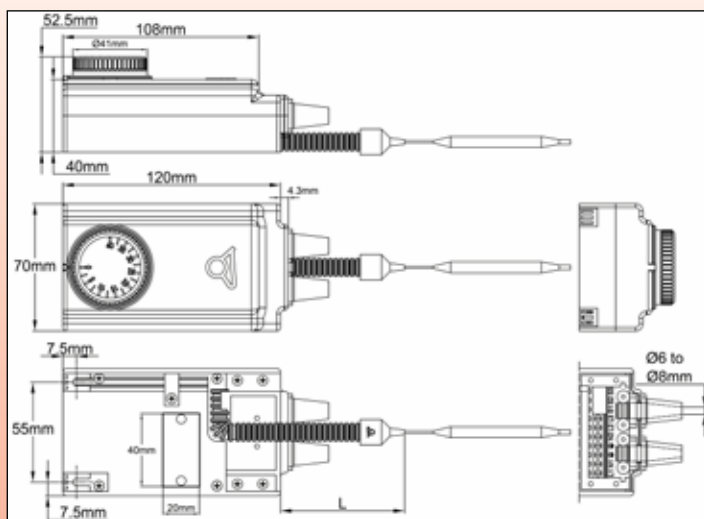


Because of permanent improvement of our products, drawings, descriptions, features used on these data sheets are for guidance only and can be modified without prior advice



IP54, Y5 Hand held or wall mounting thermostat

Distance temperature measurement



This control box has the smallest footprint and the lowest price of the Y range with waterproof enclosure. It has a modern and aesthetic design, and the same professional concept than other products of this range. Because of their small size (120 x 70 x 53 mm), these controls can be wall mounted with 2 screws 55 mm distance, hand held or just simply laid on the working table.

Enclosure: PC-ABS, black color, small footprint, can be hand held or wall mounted

Ingress protection rating: IP54 (IEC 60529)

Mechanical impact resistance: IK05 (EN 62262)

Flammability: UL94-V0

Electrical connection: on a closed screw terminal connection block cavity located backside, for wire gauges up to 2.5 mm². Cables are secured by a saddle retainer, and grommets. Ground, neutral and phase can be connected in input and output.

Power inlet and outlet: through grommets for cables dia. 6 to 8 mm. Over-molded cables on request (MOQ apply)

Adjustment: Printed knob, with min or max position adjustment.

Temperature sensing element: bulb with 1.5 m long capillary. 2 versions are available: unprotected capillary or capillary protected by corrugated plastic tube.

Adjustment ranges: -35+35°C (-30+95°F); 4-40°C (40-105°F); 30-90°C (85-195°F); 30-110°C (85-230°F); 50-200°C (120-390°F); 50-300°C (120-570°F)

Mounting: Wall mounting, for screws dia. 4 to 6 mm, 55 mm distance

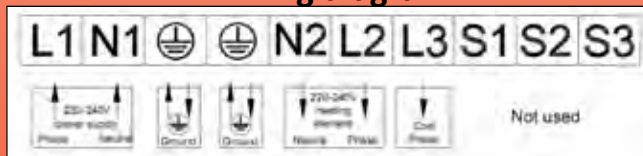
Identification: Location backside for 20 x 40 mm identification label, adhesive or riveted

Electrical contact:

- Open on temperature rise contact: 16(2,6)A, 250V AC.

- Close on temperature rise contact: 6(0.6)A, 250V

Wiring diagram



Main references without cords*

Temperature range °C (°F)	Differential °C (°F)	°C		°F	
		Reference with un-protected capillary, °C knob	Reference with protected capillary, °C knob	Reference with un-protected capillary, °F knob	Reference with protected capillary, °F knob
-35+35°C (-30+95°F)	4±2°C (7±3.6 °F)	Y5U3BC70000CUAF2	Y5U3BB70000CUAF2	Y5U3BC70000FUAF2	Y5U3BB70000FUAF2
4-40°C (40-105°F)	3±2°C (5.5±3.6 °F)	Y5U3CC70000CUAF2	Y5U3CB70000CUAF2	Y5U3CC70000FUAF2	Y5U3CB70000FUAF2
30-90°C (85-195°F)	4±3°C (7±5.5 °F)	Y5U3EC70000CUAF2	Y5U3EB70000CUAF2	Y5U3EC70000FUAF2	Y5U3EB70000FUAF2
30-110°C (85-230°F)	5±3°C (9±5.5 °F)	Y5U3GC70000CUAF2	Y5U3GB70000CUAF2	Y5U3GC70000FUAF2	Y5U3GB70000FUAF2
50-200°C (120-390°F)	5~13°C (9~24 °F)	Y5U3IC70000CUAF2	Y5U3IB70000CUAF2	Y5U3IC70000FUAF2	Y5U3IB70000FUAF2
50-300°C (120-570°F)	5~15°C (9~27°F)	Y5U3KC70000CUAF2	Y5U3KB70000CUAF2	Y5U3KC70000FUAF2	Y5U3KB70000FUAF2

* Reference with Male Euro 1m H05-VVF-3G1 cord+ no connector euro1m H05-VVF-3G1 cord: replace 0000 by EJJH

Reference with 2 euro cords 1m H05-VVF-3G1 without connector or plug: replace 0000 by HJJH

Reference with UL SJT 3 x AWG16, 1m Male cord + SJT 3 x AWG16, 1m Female cords: replace 0000 by UJJV

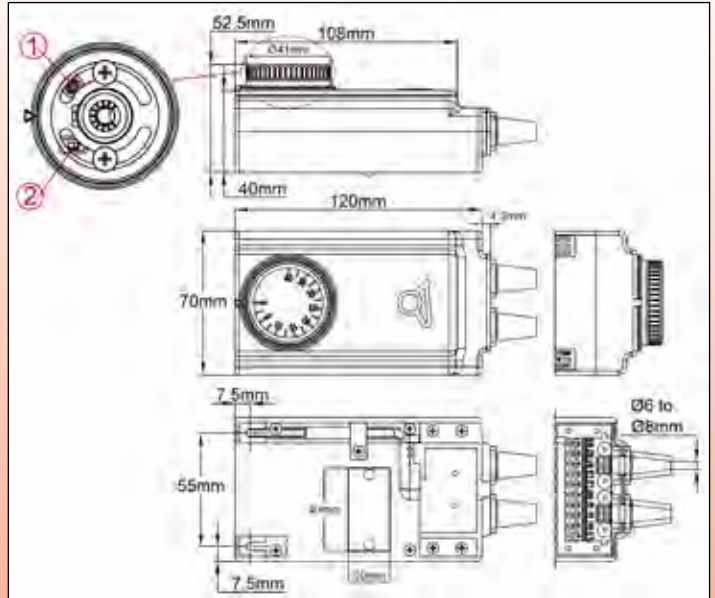
Reference with Male UL SJT 3 x AWG16, 1m cord + no connector UL SJT 3 x AWG16, 1m cord: replace 0000 by UJSJ

Reference with 2 UL SJT 3 x AWG16 1m cords without connector or plug: replace 0000 by SJSJ



IP54, Y5 Hand held or wall mounting electronic thermostat

Ambient temperature measurement (electronic)



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Enclosure: PC-ABS, black color, small footprint, can be hand held or wall mounted

Ingress protection rating: IP54 (IEC 60529)

Mechanical impact resistance: IK05 (EN 62262)

Flammability: UL94-V0

Electrical connection: on a closed screw terminal connection block cavity located backside, for wire gauges up to 2.5 mm². Cables are secured by a saddle retainer, and grommets. Ground, neutral and phase can be connected in input and output.

Power inlet and outlet: through grommets for cables dia. 6 to 8 mm. Over-molded cables on request (MOQ apply)

Adjustment: Printed knob, with min or max position adjustment.

Temperature sensing bulb: The temperature sensing bulb is located backside, in a vented and protected cavity

Adjustment ranges: -35+35°C (-30+95°F) 0-10°C (+32+50°F); 4-40°C (40-105°F)

Differential: adjustable by potentiometer located under the knob(1)

Temperature sensor: NTC sensor, located backside, in a vented and protected cavity

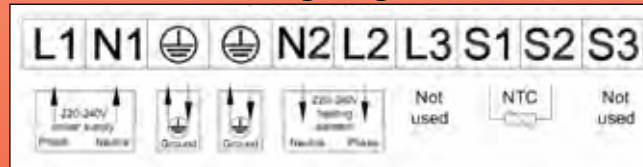
Mounting: Wall mounting, for screws dia. 4 to 6 mm, 55 mm distance

Identification: Location backside for 20 x 40 mm identification label, adhesive or riveted

Power supply: 90-250VAC, 50 or 60Hz

Electrical contact: SPST 16A 250V - Electronic thermostat: SPST+ ground terminal. Open on rise or close on rise action can be set by switch located under the knob(2).

Wiring diagram



Main references without cords*

Temperature range	References with knob in °C	References with knob in °F
-35+35°C (-30+95°F)	Y5UM1AA0000CUCF2	Y5UM1AA0000FUCF2
0-10°C (+32+50°F)	Y5UM2AA0000CUCF2	Y5UM2AA0000FUCF2
-40°C (40-105°F)	Y5UM3AA0000CUCF2	Y5UM3AA0000FUCF2

* Reference with Male Euro 1m H05-VVF-3G1 cord+ no connector euro1m H05-VVF-3G1 cord: replace 0000 by EJJH

Reference with 2 euro cords 1m H05-VVF-3G1 without connector or plug: replace 0000 by HJJH

Reference with UL SJT 3 x AWG16, 1m Male cord + SJT 3 x AWG16, 1m Female cords: replace 0000 by UJJV

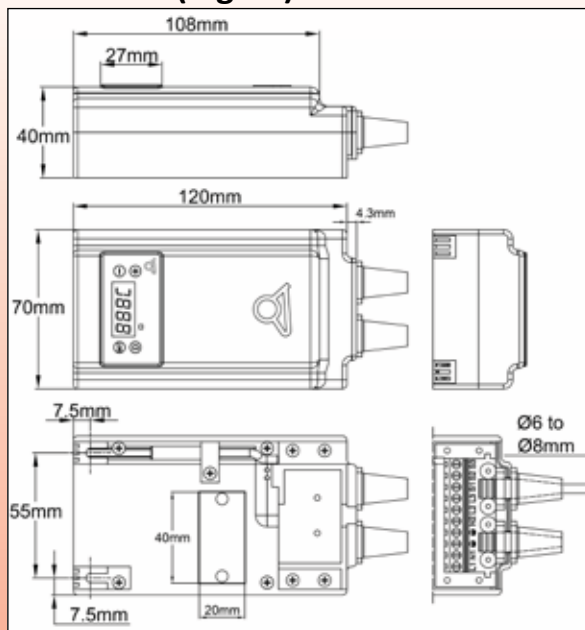
Reference with Male UL SJT 3 x AWG16, 1m cord + no connector UL SJT 3 x AWG16, 1m cord: replace 0000 by UJJS

Reference with 2 UL SJT 3 x AWG16 1m cords without connector or plug: replace 0000 by SJSJ

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Ambient temperature measurement (digital)



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Enclosure: PC-ABS, black color, small footprint, can be hand held or wall mounted

Ingress protection rating: IP54 (IEC 60529)

Mechanical impact resistance: IK05 (EN 62262) Digital display not included.

Flammability: UL94-V0

Electrical connection: on a closed screw terminal connection block cavity located backside, for wire gauges up to 2.5 mm². Cables are secured by a saddle retainer, and grommets. Ground, neutral and phase can be connected in input and output.

Power inlet and outlet: through grommets for cables dia. 6 to 8 mm. Over-molded cables on request (MOQ apply)

Adjustment: by up, down and set keys

Display: selectable in °C or °F (4 digits)

Power supply: 90-250VAC, 50 or 60Hz

Temperature sensor: Pt100 RTD, located backside, in a vented and protected cavity

Temperature control action: ON-OFF or PID with auto-tune function

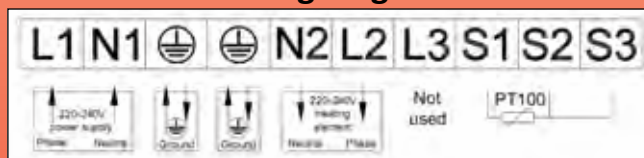
Differential: adjustable when on-Off action is selected

Mounting: Wall mounting, for screws dia. 4 to 6 mm, 55 mm distance

Identification: Location backside for 20 x 40 mm identification label, adhesive or riveted

Electrical contact: SPST, 16A 250V. Open on rise or close on rise action can be selected

Wiring diagram



Main references without cords*

Référence	Y5FQ9AA0000NUDF2
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* Reference with Male Euro 1m H05-VVF-3G1 cord+ no connector euro1m H05-VVF-3G1 cord: replace 0000 by EJHJ

Reference with 2 euro cords 1m H05-VVF-3G1 without connector or plug: replace 0000 by HJHJ

Reference with UL SJT 3 x AWG16, 1m Male cord + SJT 3 x AWG16, 1m Female cords: replace 0000 by UJVJ

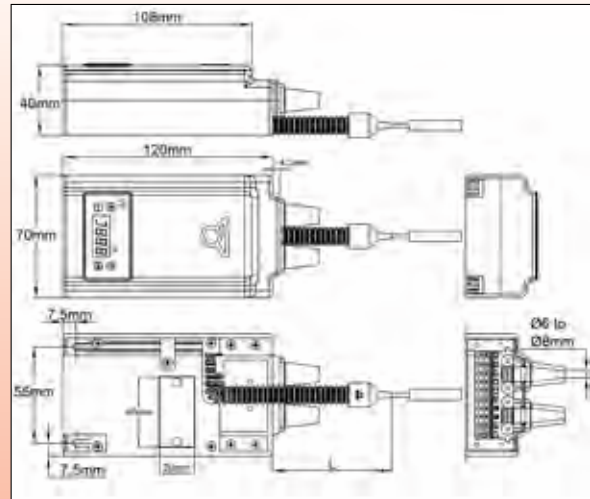
Reference with Male UL SJT 3 x AWG16, 1m cord + no connector UL SJT 3 x AWG16, 1m cord: replace 0000 by UJSJ

Reference with 2 UL SJT 3 x AWG16 1m cords without connector or plug: replace 0000 by SJSJ



IP54, Y5 Hand held or wall mounting digital controller

Distance temperature measurement (digital)



This control box has the smallest footprint and the lowest price of the Y range with waterproof enclosure. It has a modern and aesthetic design, and the same professional concept than other products of this range.

Because of their small size (120 x 70 x 40 mm), these controls can be wall mounted with 2 screws 55 mm distance, hand held or just simply laid on the working table.

Enclosure: PC-ABS, black color, small footprint, can be hand held or wall mounted

Ingress protection rating: IP54 (IEC 60529)

Mechanical impact resistance: IK05 (EN 62262) Digital display not included.

Flammability: UL94-V0

Electrical connection: on a closed screw terminal connection block cavity located backside, for wire gauges up to 2.5 mm². Cables are secured by a saddle retainer, and grommets. Ground, neutral and phase can be connected in input and output.

Power inlet and outlet: through grommets for cables dia. 6 to 8 mm. Over-molded cables on request (MOQ apply)

Adjustment: by up, down and set keys

Display: selectable in °C or °F (4 digits)

Power supply: 90-250VAC, 50 or 60Hz

Temperature control action: ON-OFF or PID with auto-tune function

Differential: adjustable when on-Off action is selected

Mounting: Wall mounting, for screws dia. 4 to 6 mm, 55 mm distance

Identification: Location backside for 20 x 40 mm identification label, adhesive or riveted

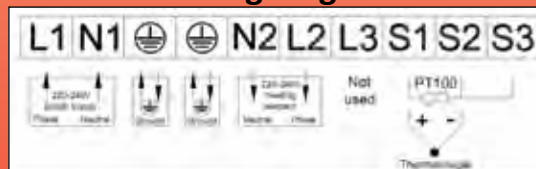
Electrical contact: Relay output, 10A 250V AC res (15 A120V AC). Open on rise or close on rise action can be selected

Temperature sensor: This control can be supplied with or without sensor. The cable can be protected by a plastic flexible corrugated tube.

This controller is multi sensor type, user settable with the following input choice:

Parameters	Sensor	Temperature range (°C)
t	Type T Thermocouple	-200~400
J	Type J Thermocouple	-200~700
E	Type E Thermocouple	-200~900
K	Type K Thermocouple	-200~1300
r	Type R Thermocouple	-50~1600
S	Type S Thermocouple	-50~1600
b	Type B Thermocouple	350~1800
W	Type WRE Thermocouple	0~2300
Cu50	Cu50	-50.0~150.0
Pt100	P100	-199~600
Pt10.0	P10	-199.9~600.0

Wiring diagram



Main references without cords*

Main features	Reference
Without temperature sensor	Y5F090A0000NUDF2
With PT100 RTD, 5 x 30 mm SS probe, 2 m protected cable	Y5FR9BA0000NUDF2
With PT100 RTD, 5 x 30 mm SS probe, 2 m un-protected cable	Y5FR9CA0000NUDF2
With K thermocouple, 5 x 30 mm SS probe, 2 m protected cable	Y5FK9BA0000NUDF2
With K thermocouple, 5 x 30 mm SS probe, 2 m un-protected cable	Y5FK9CA0000NUDF2

* Reference with Male Euro 1m H05-VVF-3G1 cord+ no connector euro1m H05-VVF-3G1 cord: replace 0000 by EJHJ

Reference with 2 euro cords 1m H05-VVF-3G1 without connector or plug: replace 0000 by HJHJ

Reference with UL SJT 3 x AWG16, 1m Male cord + SJT 3 x AWG16, 1m Female cords: replace 0000 by UJVJ

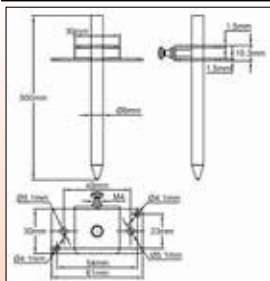
Reference with Male UL SJT 3 x AWG16, 1m cord + no connector UL SJT 3 x AWG16, 1m cord: replace 0000 by UJSJ

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IP54, Y5 Hand held or wall mounting digital controller

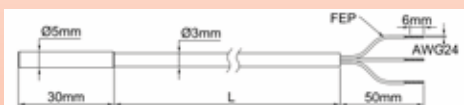


Stopper pocket for liquid temperature measurement inside bottles, carboys and other containers. Dia. 8 mm, length adjustable from 100 to 500 mm.

Reference	66DI08500FL
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Standard temperature sensors

PT100



Reference	Class	Cable length	Applications
TSR50030I2000AK6	A	2000 mm	Remote sensing
TSR50030I2000BK6	B	2000 mm	Remote sensing
TSR50030I0070AK6	A	70 mm	Room temperature sensing
TSR50030I0070BK6	B	70 mm	Room temperature sensing
TSR50030I0150AK6	A	150 mm	Room temperature sensing
TSR50030I0150BK6	B	150 mm	Room temperature sensing

Temperature range: -50 to 550°C (-60 to 1020°F) on the ceramic substrate, but temperature in use limited to 200 °C due to the FEP connecting cable

Temperature curve: EN 60751 (100 ohms @ 0°C, 138.5 Ohms @ 100°C)

Accuracy and tolerances: (according to EN 60751)

Class A, ±0.15°C @ 0°C; (±0.06 Ω @ 0°C)

Class B, ±0.3°C @ 0°C. (±0.12 Ω @ 0°C).

Protection pocket: Stainless Steel 304, dia. 5mm x 30 mm

Temperature range: -50C, +200°C

Connection cable:

- 3 wires, 0.35 mm², FEP insulation + silver-plated copper braid + FEP, temperature resistance 200°C, external diameter 2.7 mm (0.127").
- Ends: stripped

Polarity: The two red wires are connected together at their welded junction to one of the chips ceramic substrate terminal and the white wire is connected to the other terminal.

K Thermocouple

Type 1	Type 2	Type 3

Temperature curve: according to EN 60584-1 and IEC 584-1

Accuracy and tolerances: Class 2 according to EN 60584-1 and 2, ±2.5°C within -40 °C and 333 °C

Polarity (according to DIN 43714): red = positive, blue= negative

Reference	Probe type	Probe temperature range	Cable	Type
TPR00060W10002F4	bare	-50+200°C	2 x 0.35mm ² , 200°C FEP insulated L= 1m	1
TPR00060W20002F4	bare	-50+200°C	2 x 0.35mm ² , 200°C FEP insulated L= 2m	1
TPR60050I10002E4	SS 304 dia. 6mm x 50 mm	-50C, +200°C	2 x 0.35mm ² , O.D 2.7 mm nickel plated braid L = 1 m	2
TPR60050I20002E4	SS 304 dia. 6mm x 50 mm	-50C +200°C	2 x 0.35mm ² , O.D 2.7 mm nickel plated braid L = 2 m	2
TPR20200R20002E4	Refractory SS, dia. 2 mm L1= 200 mm sheathed probe	-40+800°C	2 x 0.35mm ² , O.D 2.7 mm nickel plated braid L2 = 2 m	3
TPR20400I20002E4	Refractory SS, dia. 2 mm L1= 200 mm sheathed probe	-40+800°C	2 x 0.35mm ² , O.D 2.7 mm nickel plated braid L2 = 2 m	3

Options



Standard version: grommet cable output for cables from 4 to 8.6 mm OD



SJT 3 x AWG16 cord, length 1m, with 15A UL receptacle



SJT 3 x AWG16 cord , length 1m, with 15A UL plug



SJT 3 x AWG16 cord, length 1m, without plug



H05VV-F 3G1.5 cord, length 1m, with Euro plug



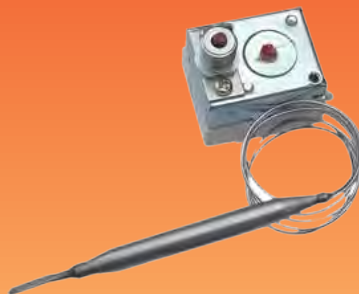
H05VV-F 3G1.5, length 1m, cord without plug



Many other temperature control components made by Ultimheat are used in appliances, commercial and industrial applications



Single pole and 3 poles bulb and capillary thermostats (Catalogue N°1)



Single pole, double pole and 3 poles Fail safe manual reset thermostats (Catalogue N°1)



Surface temperature control bimetal thermostats (Catalogue N°1)



3 poles manual reset disc thermostats (Catalogue N°1)



Energy regulators (Catalogue N°1)



Industrial temperature control boxes, with thermostats or electronic controllers (Catalogue N°3)



Simple to use Din Rail electronic temperature controllers (Catalogue N°3)



Electronic temperature controllers, On-Off or PID (Catalogue N°3)



Explosion proof thermostats and "e" increased safety connection boxes (Catalogue N°4)

Other catalogues

 **ULTIMHEAT®** 1



ELECTROMECHANICAL AND ELECTRONIC THERMOSTATS RANGE
for incorporation

For these thermostats, incorporated inside various boxes, housing and cabinets, see catalogues 0, 2 and 3.
Explosion proof versions: See catalogue 4.

as standard, optional, and accessories range of products

Technical catalogue for R&D department

 **ULTIMHEAT®** 3



INDUSTRIAL ELECTRONIC AND THERMOSTAT CONTROLS

electronic controllers, thermostatic control boxes, sub-assemblies and accessories for temperature control in electro-thermal equipment.
YB-V7-V8 series

For:
Heat tracing, immersion heaters, Air heaters,
Flexible surface heating elements, HVAC.

as standard, optional, and accessories range of products

Technical catalogue for R&D department

 **ULTIMHEAT®** 4



EXPLOSION PROOF THERMOSTATS
Types 19

For industrial and high end applications in non-hazardous areas: see our catalogue 3.
For standard applications with ingress protection housing, in non-hazardous areas: see our catalogue 2.
For incorporation in non-hazardous areas see our catalogue 1.

as standard, optional, and accessories range of products

Technical catalogue for R&D department

 **ULTIMHEAT®** 5



PRESSURE SWITCHES

Air switches,
Positive Pressure switches,
Vacuum pressure switches,
Differential pressure switches

Customer membrane types, medium pressure range (20 to 1500 mbar)

as standard, optional, and accessories range of products

Technical catalogue for R&D department

 **ULTIMHEAT®** 6



FLOW SWITCHES AND COMBINATION CONTROLS

as standard, optional, and accessories range of products

Technical catalogue for R&D department

 **ULTIMHEAT®** 7



FLOAT LEVEL SWITCHES

Vertical and horizontal models
For OEM applications

as standard, optional, and accessories range of products

Technical catalogue for R&D department

 **ULTIMHEAT®** 8



HUMIDISTATS and Electronic humidity controls

as standard, optional, and accessories range of products

Technical catalogue for R&D department

 **ULTIMHEAT®** 9



FIRE DETECTION FUSIBLE LINKS

A fusible link is a mechanical part that breaks at a preset temperature, they are used in fire detection system to open or close door, dampers, vents etc., if ambient temperature rise upon a certain value.

as standard, optional, and accessories range of products

Technical catalogue for R&D department

 **ULTIMHEAT®** 10



CERAMIC CONNECTION BLOCKS and Special connectors

as standard, optional, and accessories range of products

Technical catalogue for R&D department

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Distributor: